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**Listing of the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of claims:**

1-50. (Cancelled).

51. (Currently Amended) A method of producing a composite solid polymer electrolyte membrane (SPEM) comprising a porous polymer substrate interpenetrated with an ion-conducting material, said method comprising the steps of preparing a ~~mixture~~ common solution of the substrate polymer and the ion-conducting material and thereafter casting or extruding the composite SPEM from the ~~mixture~~ solution, and wherein

- (i) the porous substrate polymer comprises a homopolymer or copolymer of a liquid crystalline polymer or a solvent soluble thermoset or thermoplastic aromatic polymer; and
- (ii) the ion-conducting material comprises a homopolymer or copolymer of at least one of a sulfonated, phosphonated or carboxylated ion-conducting aromatic polymer or a perfluorinated ionomer.

52. (Previously Presented) The method of claim 51, wherein the SPEM is substantially thermally stable to temperatures of at least about 100°C.

53. (Previously Presented) The method of claim 51, wherein the SPEM is substantially thermally stable from at least about 100°C to at least about 175°C.

54. (Previously Presented) The method of claim 51, wherein the liquid crystalline substrate polymer comprises a lyotropic liquid crystalline polymer.

55. (Previously Presented) The method of claim 54, wherein the lyotropic liquid crystalline substrate polymer comprises at least one of a polybenzazole (PBZ) and polyaramid (PAR) polymer.

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56. (Previously Presented) The method of claim 55, wherein the polybenzazole substrate polymer comprises a homopolymer or copolymer of at least one of a polybenzoxazole (PBO), polybenzothiazole (PBT) and polybenzimidazole (PBI) polymer and the polyaramid polymer comprises a homopolymer or copolymer of a polypara-phenylene terephthalamide (PPTA) polymer.

57. (Previously Presented) The method of claim 51, wherein the thermoset or thermoplastic aromatic substrate polymer comprises at least one of a polysulfone (PSU), polyimide (PI), polyphenylene oxide (PPO), polyphenylene sulfoxide (PPSO), polyphenylene sulfide (PPS), polyphenylene sulfide sulfone (PPS/SO<sub>2</sub>), polyparaphenylene (PPP), polyphenylquinoxaline (PPQ), polyaryletherketone (PEK) and polyetherketone (PEK) polymer.

58. (Previously Presented) The method of claim 57, wherein the polysulfone substrate polymer comprises at least one of a polyethersulfone (PES), polyetherethersulfone (PEES), polyarylethersulfone (PAS), polyphenylsulfone (PPSU) and polyphenylenesulfone (PPSO<sub>2</sub>) polymer; the polyimide (PI) polymer comprises a polycetherimide (PEI) polymer; the polyetherketone (PEK) polymer comprises at least one of a polyetherketone (PEK), polycetheretherketone (PEEK), polyetherketone-ketone (PEKK), polyetheretherketone-ketone (PEEKK) and polyetherketoneetherketone-ketone (PEKEKK) polymer; and the polyphenylene oxide (PPO) polymer comprises a 2,6-diphenyl PPO or 2,6 dimethyl PPO polymer.

59. (Previously Presented) The method of claim 51, wherein the ion-conducting aromatic polymer comprises a wholly aromatic ion-conducting polymer.

60. (Previously Presented) The method of claim 51, wherein the ion-conducting aromatic polymer comprises a sulfonated, phosphonated or carboxylated polyimide polymer.

61. (Previously Presented) The method of claim 60, wherein the polyimide polymer is fluorinated.

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62. (Previously Presented) The method of claim 59, wherein the wholly-aromatic ion-conducting polymer comprises a sulfonated derivative of at least one of a polysulfone (PSU), polyphenylene oxide (PPO), polyphenylene sulfoxide (PPSO), polyphenylene sulfide (PPS), polyphenylene sulfide sulfone (PPS/SO<sub>2</sub>), polyparaphenylene (PPP), polyphenylquinoxaline (PPQ), polyaryletherone (PEK), polybenzazole (PBZ) and polyaramid (PAR) polymer.

63. (Previously Presented) The method of claim 62, wherein:

(i) the polysulfone polymer comprises at least one of a polyethersulfone (PES), polyetherethersulfone (PEES), polyarylsulfone, polyarylethersulfone (PAS), polyphenylsulfone (PPSU) and polyphenylenesulfone (PPSO<sub>2</sub>) polymer,

(ii) the polybenzazole (PBZ) polymer comprises a polybenzoxazole (PBO) polymer;

(iii) the polyetherketone (PEK) polymer comprises at least one of a polyetherketone (PEK), polyetheretherketone (PEEK), polyetherketone-ketone (PEKK), polyetheretherketone-ketone (PEEKK) and polyetherketoneetherketone-ketone (PEKEKK) polymer; and

(iv) the polyphenylene oxide (PPO) polymer comprises at least one of a 2,6-diphenyl PPO, 2,6-dimethyl PPO and 1,4-poly phenylene oxide polymer.

64. (Previously Presented) The method of claim 51, wherein the perfluorinated ionomer comprises a homopolymer or copolymer of a perfluorovinyl ether sulfonic acid.

65. (Previously Presented) The method of claim 64, wherein the perfluorovinyl ether sulfonic acid is carboxylic- (COOH), phosphonic- (PO(OH)<sub>2</sub>) or sulfonic- (SO<sub>3</sub>H) substituted.

66. (Previously Presented) The method of claim 51, wherein the ion-conducting material comprises at least one of a polystyrene sulfonic acid (PSSA), poly(trifluorostyrene) sulfonic acid, polyvinyl phosphonic acid (PVPA), polyacrylic acid and polyvinyl sulfonic acid (PVSA) polymer.

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67. (Previously Presented) The method of claim 51, wherein the porous polymer substrate comprises a homopolymer or copolymer of at least one of a substituted or unsubstituted polybenzazole polymer, and wherein the ion-conducting material comprises a sulfonated derivative of a homopolymer or copolymer of at least one of a polysulfone (PSU), polyphenylene sulfoxide (PPSO) and polyphenylene sulfide sulfone (PPS/SO<sub>2</sub>) polymer.

68. (Previously Presented) The method of claim 67, wherein the polysulfone polymer comprises at least one of a polyethersulfone (PES) and polyphenylsulfone (PPSU) polymer.

69. (Previously Presented) The method of claim 51, further comprising cross-linking the ion-conducting material to form sulfone crosslinkages.

70. (Previously Presented) The method of claim 51, further comprising chlorinating or brominating the ion-conducting material.

71. (Previously Presented) The method of claim 51, further comprising adding antioxidants to the ion-conducting material.

72. (Previously Presented) The method of claim 51, further comprising purifying the ion-conducting material.

73. (Previously Presented) The method of claim 72, wherein purifying the ion-conducting material comprises dissolving the ion-conducting material in a suitable solvent and precipitating the ion-conducting material into a suitable non-solvent.

74. (Previously Presented) The method of claim 72, wherein purifying the ion-conducting material comprises substantially removing overly sulfonated or degraded fractions of the ion-conducting material.

75. (Currently Amended) The method of claim 51, wherein the ~~mixture~~ common solution of the substrate polymer and ion-conducting material is prepared in a common solvent.

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76. (Previously Presented) The method of claim 75, wherein the common solvent is selected from the group consisting of tetrahydrofuran (THF), dimethylacetamide (DMAc), dimethylformamide (DMF), dimethylsulfoxide (DMSO), N-Methyl-2-pyrrolidinone (NMP), sulfuric acid, phosphoric acid, chlorosulfonic acid, polyphosphoric acid (PPA) and methanesulfonic acid (MSA).

77-117. (Cancelled).

118. (Currently Amended) A method of producing a composite solid polymer electrolyte membrane (SPEM) comprising a porous polymer substrate interpenetrated with an ion-conducting material, said method comprising the steps of preparing a ~~mixture~~ common solution of the substrate polymer and the ion-conducting material in a common solvent and thereafter casting or extruding the composite SPEM from the ~~mixture~~ common solution, and wherein the SPEM is substantially thermally stable to temperatures of at least about 100°C.

119. (Currently Amended) A method of producing a composite solid polymer electrolyte membrane (SPEM) comprising a porous polymer substrate interpenetrated with an ion-conducting material, said method comprising the steps of preparing a ~~mixture~~ common solution of the substrate polymer and the ion-conducting material and thereafter extruding or casting a composite film directly from the ~~mixture~~ common solution, and wherein the SPEM is substantially thermally stable to temperatures of at least about 100°C.

120. (Cancelled).

121. (Previously Presented) A method as in any of claims 118-119, wherein the SPEM is stable from at least about 100°C to about 175°C.

122. (Previously Presented) A method as in any of claims 118-119, wherein the SPEM is stable from at least about 100°C to about 150°C.

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123. (Previously Presented) A method as in any of claims 118-119, wherein the porous polymer substrate comprises a homopolymer or copolymer of a liquid crystalline polymer or a solvent soluble thermoset or thermoplastic aromatic polymer.

124. (Cancelled).